

The dead lost their lives in the following ways:

Mrs. A. C. Carpenter, Pearl Rock: Struck by flying board while in the yard, unreasonably refusing to enter the cellar under the house as her companion wished her to. Results proved that she would have been safe in the cellar.

Mr. Roy Husband, near Nashua: Struck on head by falling cement block while in the cellar under building which was wrecked. The cellar was filled with wreckage; there were five others in it and all were more or less injured, but none have since died.

Mrs. Alice Dowd, 6 miles southwest of New Hampton: Manner of death unknown. Eighty-four years old and alone in building. Body found within foundation of barn, which had been blown away, badly broken and bruised. That she was killed while within the home near by was established through a piece of the frame of her dead son's picture which she still retained in hand. The picture had hung in the living room, and when she felt the house going she probably tried to save it.

Mr. Albert Smith, 5 miles southwest of New Hampton: Struck on the head by a block from the chimney when the house was demolished. Wife and child with him escaped with bruises.

Theo. Krueger, jr., 1 mile south of New Hampton: Killed by falling barn in which he had just placed horses. He and his father were bringing school children home in a wagon. When they saw the storm approaching they drove into a farmyard and sent the children into the cellar under the house. They then drove the team into the barn. The father remained outside; when the storm struck him he clung to an apple tree and escaped with bruises.

Mr. and Mrs. Peter Anderson, Calmar: Killed when their house fell to pieces and the wreckage of other buildings was piled on its ruins.

That more lives were not lost is partly because the storm did not cross the crowded parts of the few towns that it touched; and partly because its slow forward movement gave people time to seek cellars and other relatively safe places after they saw it approaching. Some such reported instances in illustration, follow:

Miss Vera Deisler, teacher at the Pearl Rock school, formed her pupils in a chain of clasped hands and led them to a hedge to which they all clung with the strength of desperation until the storm passed. The school building was scattered far and wide.

At one schoolhouse, totally wrecked, it is claimed that the change in time, daylight saving, probably saved many little children from death or injury. School had been dismissed for the day long enough for the children to have reached their homes. Under normal time they would have been in the building.

At another schoolhouse they were having a picnic in celebration of the end of the term. It was filled with women and children. When the storm was seen approaching they fled to a near-by farmhouse cellar. The house over the cellar was completely blown away, but not one of the thirty occupants of the cellar was injured.

East of Nashua there is a group of Piersons, father and sons, on adjoining farms. All took to cellars, and while some of the houses went away no one was hurt. Mr. E. D. Pierson, his wife and five children went into the cellar. Before they realized that their house had been hit they were looking up into the very heart of the tornado, which was trying to lift them out of their refuge. By clinging to each other and to the wall of the cellar they managed to stay on the floor till the storm passed.

Some children alone at their home remained in the yard until they saw a neighboring place going, then took to their cellar. The house and outbuildings were wrecked, but when the parents returned they found the children safe.

But a cellar under a building is not always a safe refuge. In the above accounts, it is related that one man was killed and others injured by falling debris while in such a cellar. Some of the reported instances where the cellar was unsafe were:

Mr. Cecil Gray, near New Hampton, would not risk the cellar because it was shallow. He, his wife, and child clung to some lilac bushes and escaped. The house tumbled into the cellar and the wreckage caught fire.

Mrs. McGrath, near Nashua, led her children into a plowed field where all lay in furrows with safety. Had they gone into their cellar they would probably have been killed, as the house collapsed and fell into the cellar.

Mr. Strawson, near Nashua, had a new modernly constructed home, one of the best farm buildings in this section of rich farms. Before going into the basement he took the precaution to throw water on the furnace fire to guard against that possible danger, thinking the basement otherwise safe. When the storm began tearing the house to pieces he and his family huddled together in the northwest corner.

Suddenly a section of the roof dropped over them, one edge resting on the foundation wall, and at the same time the rest of the basement was filled with wreckage and their section of roof was piled high with it. But for the lucky falling of that piece of roof they would all have been killed.

Evidently the safe cellar is one located far enough away from buildings to be reasonably safe from falling wreckage and having a sod roof.

Some reported tornado freaks:

Mr. Smith, fishing from a boat on the Cedar River near Nashua, was thrown from the boat. He clung to some bushes and was whipped about by the wind until his arms were nearly torn from his shoulders, but saved his life. The boat was broken up.

A family caught in a plowed field lay the storm out in furrows. There was a dog with them. As the cloud approached, the dog was seen to be desperately trying to dig himself into the ground. When the cloud was over them the suction was so great that the people had all they could do to stay in the furrows and did not see what happened to the dog. After the storm he was gone. The next day he limped into the farmyard, footsore and exhausted; much of his hair was gone and the remnant twisted or on end. Those people think that the dog was sucked up into the cloud and dropped a long way from home.

That this explanation of the dog's appearance and long absence is not improbable is evidenced by the mud deposited on buildings and other objects struck by the storm. This mud had been picked up from wet plowed land and carried along, possibly many miles. Also, along the path of the storm dead chickens were found, their bodies crushed flat and entrails protruding. It is claimed that a strong man could not throw a full-grown hen against the ground hard enough to produce that result. Apparently the storm picked them up and then threw them down with great force.

A large silo at Pearl Rock had its staves pushed in, but not broken. The roof was merely pushed partly off. The silo had a small quantity of ensilage in it. The staves were raised off the bottom boards some 10 to 18 inches. There are the usual number of rod-iron hoops on the silo. None of these broke.

The Cedar Valley Electric Co. has a power circuit of large copper wire on poles along the road through Nashua and Pearl Rock. In places the poles were torn out of the ground, the wire pulled from the poles and twisted into every possible shape, whole spans of it being compressed into 2 or 3 foot lengths. The company estimated their loss in material to be \$6,000. None of the recovered wire can be used again and much of it has not yet been located.

METEOROLOGY IN NORWAY FOR 50 YEARS.¹

[Review reprinted from *Nature*, London, Mar. 14, 1918, 101: 26-27.]

The volume before us, published in celebration of the 50 years' existence of the Norwegian Meteorological Institute, commences with brief sketches of the lives of Prof. Henrik Mohn and Director Aksel Steen, to both of whom the institute, to a large extent, owes its development. A very interesting account is given of the history of meteorology in Norway. Owing to the peculiar geographical position of the country, meteorology was early found to be of special importance and observations were taken from the end of the seventeenth century; but it was not until the beginning of the nineteenth century that regular observations in the modern sense of the word were commenced. In 1811 Prof. Esmareck began them in Christiania, and in 1837 Prof. Hansteen took daily observations of pressure, temperature, wind direction, and force, cloud amount, and appearance of the sky. A scheme was then put on foot for organizing daily observations in the different parts of the country, but these gradually fell off, until in 1850, with the exception of the unbroken records at Christiania, meteorological work in Norway was almost at a standstill.

It was the great storm of 1854, which overtook the French and English fleets on the Crimean coasts, that gave a new impetus to meteorology in Europe, and in

¹ *Norway Meteorologiske Institut. Meteorologien i Norge i 50 aar: Festschrift utgitt av det Norske meteorologiske institut i anledning av dets 50-aars jubilaum*, 1. December, 1916. Kristiania, 1917. 138 p. illus. 28 cm.

1855 Le Verrier made proposals for an international weather service. Norway was greatly interested in the new movement, and in 1860 C. Nielsen, director of telegraphs in Norway, established five stations along the coast—Christiansund, Aalesund, Skudenes, Mandal, and Sandøysund—with the necessary instruments and staff. At these stations observations were made three times daily of pressure, temperature, humidity, wind, weather, and cloud. A short time later an inland station was established at Dombaas, and reports were exchanged between these stations and Sweden, and also, after a few years, with Paris.

The six stations were soon found to be insufficient for the proper development of meteorological work in Norway, and in 1865 it was resolved to erect a meteorological institute and to appoint a professor of meteorology. The institute was commenced, and in 1865 Henrik Mohn was appointed professor of meteorology and director of the meteorological institute. New instruments were installed at the existing stations, and on December 1, 1866, the Norwegian Meteorological Institute began its operations, with the cooperation of the six stations mentioned and also of Bergen and Christiania.

Prof. Mohn's initiative soon resulted in great developments. The number of climatological stations was rapidly increased; in 1871 there were 55, in 1898, 80. The collection of rainfall statistics also interested Prof. Mohn greatly, and by 1890 he had established nearly 100 stations. In 1895 the number reached about 300, and a few years later 500 stations reported rainfall to the institute.

The international exchange of telegrams was also developed. As early as 1869 telegrams were received from Great Britain. Denmark commenced in 1871, Sweden in 1873; Russia, Finland, Germany, and France began in 1892, and the Faroe Islands in 1907. Spitzbergen, Austria-Hungary, and Italy joined in 1912, followed in 1913 by Holland, Spain, Portugal, and Madeira.

Meanwhile the telegraphic reporting of observations from Norwegian stations was increased. By 1892, 33 stations reported by telegraph, while by 1914 the number had increased to 69.

Services of storm warnings and forecasts were commenced early in the history of the institute. The reports and publications were organized and developed, and the volume gives diagrammatic representations of the growth of the institute's reporting stations, staff, budget, and library.

Aerology received much attention at the beginning of the present century. Sounding balloons were sent up, and in 1909 pilot balloon ascents were begun. In 1912 this part of the work was taken over by Prof. V. Bjerknes, and it is now carried on by the observatory at Aas.

Notes are given on the past and present members of the staff of the institute and detailed descriptions of the growth and work of each of the three sections dealing with climatology, forecasting, and rainfall respectively. The establishment and work of the observatories at Aas, Bergen, and Haldde are described, and the book is illustrated by interesting photographs of the institute and observatories and by reproductions of charts and diagrams.

FREQUENCY OF SNOW IN TRIPOLI AND ALGERIA.

[Reprinted from Nature, London, Jan. 3, 1918, 100: 350.]

Prof. Filippo Eredia has recently published in the *Bollettino d'Informazione* of the Italian colonial office a useful note on the frequency of snow in Tripoli and in

Algeria. In the last-named country, at sea level, snow is rare, since only one fall in the whole year may be expected. At a height of 600 meters, 6 falls per annum occur on the average, while at double this elevation, 25 falls are experienced. In Algeria and Tunisia the most frequent and extensive snowfalls occurred in the winter of 1890-91, while 1884, 1904-5, 1913, and 1915 were also characterized by abundant snowfalls. Some interesting photographs are given of snow scenes in Tripoli during the snowstorms of February, 1913, and February, 1915.

"PRAYING" PALM TREE OF FARIDPUR.

[Reprinted from Nature, London, Mar. 28, 1918, 101: 70.]

The [Indian?] *Pioneer Mail* of January 11 reports a lecture by Sir J. C. Bose on "The Praying Palm Tree" of Faridpur. While the temple bells call the people to evening prayer this tree has recently been seen to bow down in prostration and to erect its head on the following morning. Large numbers of pilgrims have been attracted to the place, and offerings to the tree are said to have been the means of effecting marvelous cures. Sir J. C. Bose first procured photographs which proved the phenomenon to be real. The next step was to devise a special apparatus to record continuously the movement of the tree by day and night. The records showed that it fell with the rise of temperature and rose with the fall. The records obtained in the case of other trees brought out the fact that all the trees are moving, each movement being due to changes in their environment.

"SUMMER TIME" IN 1918.

[From Nature, London, Mar. 14, 1918, 101: 27.]

Summer time began in France and Italy on March 10; it begins in Great Britain on March 24, and will begin in Holland on April 1. The dates on which summer time ends are also different in different countries. However, much "daylight saving" by alteration of clocks may be appreciated by the public, there can be no doubt that the varying dates adopted for the beginning and ending of the change of standard are most confusing, and will render it very difficult to determine the exact instant at which any records of observations of natural occurrences are made.

RUSSIA ADOPTS THE GREGORIAN CALENDAR.

[From Nature, London, Feb. 21, 1918, 100: 488.]

We learn from a message from the Petrograd correspondent of the *Times*, published in the issue of February 20, that the abolition of the Julian calendar and the substitution of the reformed, or Gregorian, calendar has been formally announced by the Government of the People's Councils. "Attempts from the time of Peter the Great to effect this reform have always failed through ecclesiastical opposition, but now that the Orthodox Church has been divorced from the State its opinions and traditions are entirely ignored."

DIURNAL VARIATION OF ATMOSPHERIC PRESSURE.

[Abstract reprinted from Nature, London, May 30, 1918, 101: 253-254.]

The effect of geographical latitude on the semidiurnal wave of atmospheric pressure is fairly regular and well marked, but the variation of the diurnal wave has at-